

## Accepted Manuscript

Title: An Area-wide Layout Design Method Considering Piecewise Steam Piping and Energy Loss

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# An Area-wide Layout Design Method Considering Piecewise

## Steam Piping and Energy Loss

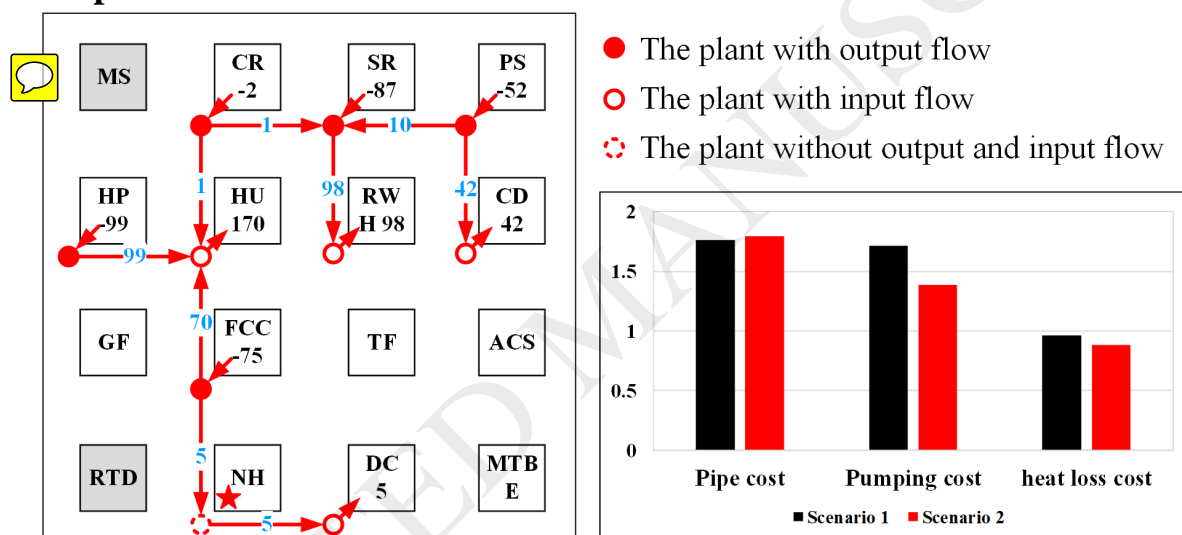
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### Graphical abstract



The layout of 3.5 MPa steam piping

The results of two plant layouts

### Highlights

- Area-wide layout is optimized based on pipeline arrangement;
- The implementation of both one-to-one pipe layout and pipe network layout are considered;
- Energy loss due to pressure drop and heat loss is involved;
- Piping is piecewise calculated according to the stream flow rate.

**Abstract:** Pipeline layout is a significant factor influencing an area-wide layout. But in the most of published works, piping system only consists of the one-to-one connection pipelines with constant diameters. In addition, energy loss is sometime ignored in previous works. In this work, energy loss due to pressure loss and heat loss is taken into consideration originally.

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